

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2004/051339

International filing date (day/month/year)
02.07.2004

Priority date (day/month/year)
02.07.2003

International Patent Classification (IPC) or both national classification and IPC
B22D11/06, B22D11/103

Applicant
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1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1 (a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/051339

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2004/051339

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-6
	No: Claims	
Inventive step (IS)	Yes: Claims	3
	No: Claims	1-2,4-6
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

2. Citations and explanations

see separate sheet

- 1 The following documents are referred to in this communication:

D1 : WO 03/051560 A (ECKERSTORFER GERALD ;HOHENBICHLER GERALD (AT); HOEDL HEINZ (AT); M) 26 June 2003 (2003-06-26)

D2 : DE 863 119 C (VER LEICHTMETALL WERKE GES MIT) 15 January 1953 (1953-01-15)

D3: FR-A-1 447 139 (HAGENBURGER CHAMOTTE TON) 29 July 1966 (1966-07-29)

D4: US-A-6 095 233 (LEABEATER STEPHEN BRUCE ET AL) 1 August 2000 (2000-08-01)

- 2 Novelty Art. 33(2) PCT

The subject-matter of claim is novel over D1 and D2 by the feature of the prismatic shape of the distributor.

- 3 Inventive Step Art 33(3) PCT

- 3.1 Both D1 and D2 can be regarded as closest prior art, because they function in the same ways as present claimed feed device:

They comprise a central tank, to which the molten metal is supplied and at least two tanks at the ends of the distributor, separated by walls, to which the molten metal flows after having filled the first tank. The latter tanks feed subsequent ingot mould(s). The tanks have a converging cross section (D1, p.10, last par. - p.11, first par., fig. 4a,4b and D2, p.2, fig. 1,2)

The feed devices are foreseen to feed circular continuous casting moulds, therefore, their tanks have a corresponding circular shape and circular discharge holes.

For the skilled person, it is clear that the shape of the distributor and the shape of the mould have to be corresponding.

Consequently, when casting a rectangular shape or even a metal strip like in D4, the

skilled person would modify the distributor shape from a round shape to an elongated, prismatic shape and also the discharge holes from a round shape to a slot.

Therefore, the subject-matter of claims 1, 2 and 6 would therefore not involve an inventive step.

The devices according to D1 and D2 also comprise a discharger for discharging molten metal from a tundish to the intermediate tank of the distributor (figs.) The discharger (6) according to D1 has a funnel-like shape (Fig.4a). It does not appear to be divergent, therefore its divergence is less than 7°.

Therefore, the subject-matter of claims 4 and 5 would therefore not involve an inventive step.

- 3.2 The cited document do not disclose or render obvious a further distributor between the 3-tank distributor and the ingot mould.
The effect is a even more uniform and homogenous flow.
inventive step of the subject-matter of claim 3 is therefore acknowledged.

4 Further remarks:

D1 and D2 as well as D4 should be acknowledged in the description.